The Effect of a Resiliency Training on Vicarious Trauma in Law Enforcement

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Abstract

Vicarious exposure to traumatic events is correlated with: mental health problems, a higher prevalence of posttraumatic stress disorder, employee attrition, and higher mortality rates for Law Enforcement Officers when compared to the general population. The purpose of this evidence-based project was to determine if a resiliency training improved resiliency and resiliency knowledge in law enforcement officers in a rural law enforcement agency in the southwestern United States. Six participants completed a demographic survey, Response to Stressful Experience Scale and a resiliency knowledge measure. A Wilcoxon signed-rank test was conducted to compare pre- and post- training resiliency and resiliency knowledge scores. The post-test overall resiliency scores (*Mdn* = 59.50) were not significantly higher than pre-test overall resiliency scores (*Mdn* = 54.50), $Z = -1.47$, $p = .141$. Post-test resiliency knowledge scores (*Mdn* = 9.00) were not significantly higher than pre-test resiliency knowledge scores (*Mdn* = 8.00), $Z = -1.63$, $p = .102$. In this group of law enforcement officers, the resiliency training did not have an effect on resiliency or resiliency knowledge. These outcomes could be potentially explained by the limited sample size ($N = 6$), and possibly small effect size. Recommendations for improving the current study include conducting the resiliency training with a larger sample size of at least 30, and including additional relevant questions in the resiliency knowledge measure.

Keywords: law enforcement officers, training, suicide, posttraumatic stress disorder, PTSD, resilience, vicarious trauma

The Effect of a Resiliency Training on Vicarious Trauma in Law Enforcement

Law enforcement officers (LEOs) are frequently exposed to traumatic situations that result in stressful life and death decisions. Dedication to public safety requires a commitment that goes beyond the basic call to duty. Prolonged physiological stress from vicarious trauma (VT) increases LEOs' risk for depression, substance abuse, posttraumatic stress disorder (PTSD), suicide, and burnout (Regehr & LeBlanc, 2017). Surviving emotional, physical, and mental challenges associated with policing requires training to enhance individual resilience and protect overall wellbeing (Regehr & LeBlance, 2017).

Problem Statement

The mental health welfare of LEOs is a significant issue throughout the United States. In 2017 the Law Enforcement Mental Health and Wellness Act was passed by Congress and signed into law by the president (H.R.2228, 2018). Men and women who frequently put their lives on the line to protect communities, or who, in the course of daily work life, witness traumatic events, are vulnerable to the development of mental health conditions. Failure to treat mental illness can prolong human suffering and result in suicide (Chopko, Palmieri, & Adams, 2015). LEO suicide rates are four times higher than the national average (National Alliance on Mental Illness [NAMI], 2019). Nationally, there was a 30% increase in the LEO suicide rate; with106 documented suicides in 2016 and 140 in 2017 (NAMI, 2019).

VT is defined as an occupational challenge in professions involving law enforcement, victim services, emergency medical services, and fire services that is a consequence of chronic exposure to victims of violence and trauma (Office of Justice Programs, 2019). LEOs have a higher prevalence of PTSD associated with VT when compared to the general population (Franczak, Barshter, Reich, Kent, & Zautra, 2016). Review of internal data collected from a rural

law enforcement agency from 2009 to 2017 reflects a 140% increase in service related calls involving mental health emergencies and suicide-related crises. Consequently, local LEOs are in a unique position to determine the course and possible outcome of the suicidal crises. They are at greater risk of exposure to potentially traumatic situations, increasing the chance of developing symptoms associated with PTSD and other mental health disorders.

Purpose and Rationale

The purpose of this paper is to increase awareness regarding the high prevalence of PTSD, depression, and substance abuse among LEOs and to provide treatment through a resiliency training (Stanley, Hom, & Joiner, 2016). Mental illness is treatable; however, without treatment the cost to society and the individual are great (Trautmann, Rehm, & Wittchen, 2016). One's mental health can have adverse consequences on physical health, severely limiting LEOs functioning and contributing to performance deficits, thereby jeopardizing the safety of the community. Failure to adequately treat mental illness in LEOs leads to increased risk of suicide (Trautmann et al, 2016). Trauma treatment guidelines recommend promoting resilience as essential for the survival of LEOs in life and the workplace (McCraty & Atkinson, 2012; Molnar et al., 2017).

Background and Significance

Cumulative exposure to potential harm is associated with: mental health problems, a higher prevalence of PTSD, employee attrition, and higher mortality rates for LEOs when compared to the general population (Marchand et al., 2015). Law enforcement agencies are tasked with the responsibility of meeting diverse public needs, and LEOs are exposed to a variety of mental and emotional challenges when responding to calls for service in the community (Marchand et al., 2015). This is particularly true when calls for service involve individuals with

mental illness and suicidal ideation. These types of calls represent a growing concern for law enforcement nationwide (International Association of Chiefs of Police, 2014). Advances in practice and science emphasize the professional challenge associated with VT and the importance of treating it in the work place (Molnar et al., 2017).

Internal Evidence

Locally, suicide rates have almost doubled in the community over the past two years. LEOs responded to 177 calls for service involving suicidal persons in 2014 and 331 in 2017. Increasing trends toward exposure to trauma and high attrition rates support the need for a program designed to protect LEOs from developing mental illness. Trauma-focused resiliency training is important for promoting adaptation skills during experiences involving trauma, tragedy, and significant stress in order to minimize susceptibility to the development of symptoms associated with PTSD (Joyce et al., 2017; Robertson, Cooper, Sarkar, & Curran, 2015). This discussion has led to the development of the following PICOT question: “In a group of law enforcement officers (P), how does participation in a resiliency training (I) as compared to pre- and post-training (C) affect scores on a measure of resiliency and on a measure of knowledge of resiliency (O)?”

Search Strategy

A comprehensive search was performed in four databases – PubMed, PsycINFO, EBSCOhost, and Cochrane Library. A combined search was conducted using the following key terms to address the PICOT question: *police, stress disorder, education, training, response to stressful experiences, resilience,* and *response to stress.* Inclusion criteria included adult subjects, full text, peer-reviewed journals written in English, and published from 2013-2018. Articles

without statistically significant results, low level of evidence, high attrition rates, exploratory research, and invalid measures were excluded.

Key search terms were combined using Boolean operators to refine results. An initial search using keywords *police* and *stress disorder* without inclusion criteria yielded the following results: 468 in PubMed, 941 in PsycINFO, 185 in EBSCOhost, and 65 in Cochrane Library. The combined search terms *police* and *stress disorder* and *education* with inclusion criteria resulted in 14 articles in PubMed, 21 in PsycINFO, 4 in EBSCOhost and 16 in Cochrane Library. Incorporating key search terms used in the PICOT question *police* and *resilience* and *training* with inclusion criteria yielded the following results 23 in PubMed, 22 in PsycINFO, three in EBSCOhost, and seven in the Cochrane Library.

During the critical appraisal process articles and references of articles were evaluated for strong methodology, accurate data, clinical relevance and statistical significance for answering the PICOT question. The final results yielded 10 articles meeting criteria for higher levels of evidence.

Synthesis of Evidence

A total of 10 articles were selected for review. Current studies include two mixed method (MM) studies, six randomized control trials (RCTs), one systematic review (SR) and one meta-analysis (MA). The studies were organized hierarchically with RCTs, MA of RCTs, and SR of RCTs ranked level one indicating the highest level of evidence; MM studies were ranked level two indicating a lower level of evidence (Appendix B). Study limitations included an over-representation of male participants decreasing the ability to generalize findings to female LEOs (Appendix B). Researchers speculated that males dominate first-responder professions and this may have contributed to a smaller number of female participants (Tuckey & Scott, 2013).

Sample demographic data demonstrated a moderate degree of homogeneity (Appendix B). Participants included LEOs, fire fighters, veterans, medics, and 911 dispatchers. The mean age of participants ranged from 24 to 46 years. The duration of professional experience varied from less than one year to over ten years (Appendix B). Samples included 12 to 900 participants. Demographic data revealed ethnically diverse samples (Appendix B). Studies originated in the US and Europe (Appendix B).

Dependent and independent variables were clearly defined (Appendix A). Multiple interventions involving mindfulness-based resiliency training (MBRT) supported findings across studies for a reduction in the number and severity of PTSD symptoms in participants (Appendix B). Time frames for interventions varied from 90 minutes to eight weeks (Appendix B). Statistically significant results included improvements in use of force decisions, situational awareness, physiological and psychological responses to stress, quality of life, resilience, and decreased alcohol consumption (Appendix B). Outcome measures were robust, valid, and reliable (Appendix A).

The evidence suggests that in conjunction with social support, resilience training and education fosters the development of a set of skills that help with better management of emotional and physiological responses to traumatic situations (Iacoviello & Charney, 2014). Prevention and treatment efforts can decrease the susceptibility to suicidal thoughts, or behaviors, and mental illness. The increasing complexity of occupational stress and chronic exposure to trauma faced by LEOs emphasizes the importance of resiliency interventions to help them better manage physiological responses to stress (Boyd, Lanius, & McKinnon, 2018). Although occupational stress has negative consequences, there is evidence to support the claim that cumulative vicarious exposure to trauma results more frequently in PTSD and suicide

(Stanley et al., 2016). Because PTSD is characterized by the dysregulation of physiological responses to trauma related stress, coping strategies that help with better management of this type of stress would lead to a reduction in the number of cases of PTSD (Banks, Newman, & Saleem, 2015; Liberzon & Abelson, 2016). Resiliency training has demonstrated a reduction in the number of PTSD cases by promoting effective coping strategies that help LEOs better regulate trauma related stress (Kaplan, Bergman, Christopher, Bowen, & Hunsinger, 2017). Because suicidal thoughts, intentions, and behaviors are characterized by a feeling of helplessness, interventions that promote emotional cohesion in the face of psychological isolation and pain could lead to a reduction in the number of cases of suicide by LEOs (Banks et al., 2015). In conjunction with social support, Resiliency Training leads to a reduction in the number of cases of suicide by LEOs as a result of cumulative vicarious exposures to trauma (Kaplan et al., 2017). Therefore, Resiliency Training is an effective prevention and treatment approach for the deleterious consequences of vicarious exposure to trauma faced by LEOs.

Theoretical/Conceptual Framework

Homeostasis is a tendency of the body to maintain a relatively stable equilibrium between interdependent elements (Sadock, Sadock, & Ruiz, 2015). Allostasis is a physiological mechanism by which the body responds to stressors to maintain homeostasis (Sadock et al., 2015). Key biological systems work in conjunction with brain function, social influences, and genetics to promote resiliency by minimizing the allostatic load (Sadock et al., 2015). Hans Seyle's (1936) neuro-hormonal theory describes the biological responses to stress determining that chronic exposure to adverse conditions contributed to negative physical changes.

Seyle's General Adaptation Syndrome defines the "human stress response" through a sequence of three stages including alarm, resistance, and exhaustion (Appendix C). The theory

underscores the project foundation by emphasizing the continuous cycle, stages and negative outcomes associated with frequent exposure to stress. During the alarm stage the body prepares for “fight” or “flight” in the presence of a “perceived threat” signaling the sympathetic nervous system to release excessive amounts of cortisol and other stress hormones (Seyle, 1936). During the resistance stage the body attempts to restore homeostasis by reducing sympathetic nervous system activity and adrenal cortical activity. The alarm and resistance stage are continuous throughout life (Seyle, 1936). When stressors are chronic, the increased intensity of the demand leads to a reduction in the time it takes to reach the exhaustion stage (Seyle, 1978). Failure to adapt to the stressors results in a failure to restore homeostasis, reducing the chances of survival, resulting in death. Interventions that enhance one’s capacity to self-regulate negative arousal during the stress response, described by Seyle, can maximize adaptation toward avoiding exhaustion and thereby promote resilience (Boothroyd, Green, & Dougherty, 2018).

Evidenced Based Practice Model

The *Academic Center for Evidence (ACE) Based Practice Star Model of Knowledge Transformation* (Appendix D) was selected as an evidence-based practice model to guide the project using five phases to transform knowledge: discovery, summary of evidence, translation, integration, and evaluation (Schaffer, Sandau, & Diedrick, 2012). Knowledge is transformed through a sequential process using each point of the model building a scientific foundation to support organizational change toward the adoption of professional development opportunities that improve outcomes in LEOs (Schaffer et al., 2012). The discovery phase involved traditional research methodologies to collect evidence in scholarly databases. The evidence was synthesized in tables using a rigorous review process generating findings that support resiliency interventions for promoting positive outcomes in LEOs exposed to VT. Translation involved implementing

evidence-based treatment guidelines to develop a Resiliency Training for LEOs exposed to VT. The integration phase was used to promote change through the delivery of a Resiliency Training in professional practice at both the individual and organizational level. The outcomes were evaluated to inform practice to support the continued implementation of a Resiliency Training for LEOs.

Methods

Ethical Considerations

Approval was obtained by the Institutional Review Board affiliated with Arizona State University (Appendix E) in conjunction with site authorization (Appendix F) prior to the implementation of the Resiliency Project. Patrol supervisors recruited potential participants announcing the training with an agency memo. Informed consent (Appendix G) was obtained prior to LEOs engagement in the training. To ensure confidentiality all instruments used to collect the data were coded using a project identification numbers that included the last two digits of participants Social Security Number, the last two digits of their birth year and the first two digits of their birth month.

Setting and Participants

The project site was at a law enforcement agency located in a rural area in the southwestern United States. LEOs voluntarily attended the training. They were not compensated for their participation. Inclusion criteria included: LEOs employed by the site, English speaking, over the age of 18; able to read, write and understand English.

Intervention

This project consisted of a pre-post design method. LEOs attended a 90-minute Resiliency Training (Appendix H). A PowerPoint was used as an instructional visual aide.

Written materials included a resiliency training test, Response to Stressful Experiences Scale (RSES) and a demographic survey. Participants completed a resiliency test, RSES, and Demographic Survey before the intervention. A resiliency test and RSES were completed post intervention. The total time to complete the surveys was approximately 20 minutes.

Instruments/Outcome Measures

Response to Stressful Experience Scale. Resilience was measured using the RSES (Appendix I) from the Veteran Affairs National Center for PTSD (Johnson et al., 2011). Outcomes were evaluated by comparing pre and post training resilience scores. The RSES is a 22-item self-report measure. The RSES was selected because it has demonstrated good internal consistency ($\alpha = .91 - .93$) in addition to good test-retest reliability (r = .87) (Johnson et al., 2011).

Resiliency knowledge measure and demographic survey. The resiliency pre-test and post-test (Appendix J) consisted of 12 identical multiple-choice questions with three additional questions on the post-test soliciting participant feedback regarding the project. Outcomes were evaluated by comparing pre and post test scores A demographic survey (Appendix K) consisting of 22 questions was developed to collect participant information regarding ethnicity, total number of male and female participants, age range, years of professional experience, resiliency training hours, and job-related trauma exposure.

Data Analysis

This project investigated the efficacy of resiliency training with a sample of rural law enforcement officers. In other words, the increase in the law enforcement officers' levels of resilience, knowledge, and coping skills, was evaluated toward promoting their psychological and physiological wellbeing. Six law enforcement officers volunteered and participated in the

training. Participants completed a pre/post intervention measure of resilience and a pre/post-test measuring the knowledge of resilience. Participants also provided demographic information. First, a description of demographic characteristics was reported, followed by descriptive statistics for the RSES and resiliency knowledge measure both pre- and post-test. Finally, the PICOT question was addressed using the non-parametric, Wilcoxon signed-rank test due to the relatively small sample size ($N = 6$).

Before any analyses were conducted, data were screened, coded, and imputed into the Statistical Package for the Social Sciences (SPSS) software. The RSES scores were calculated as the sum of responses to each of the 22 items on the survey. All items were scored from a scale of 0 (“not at all like me”) to 4 (“exactly like me”). Scores on the RSES could range from 0-88. According to the original scale convention, scores on the RSES ranging from 0-49 were considered “low resilience”, 50 to 70 “moderate resilience”, and 71 to 88 “high resilience” (Johnson et al., 2011). Items on the resilience knowledge test were coded as 1 = correct response, 0 = incorrect response. Total resilience knowledge scores were calculated as the sum of each item’s response. For example, a participant with 12 correct responses would receive a resilience knowledge score of 12.

First, frequencies and percentage summaries were used to summarize categorical data, including demographic information. Then, descriptive statistics, including measures of central tendency and measures of variability were calculated and reported for each of the pre- and post-test measures. Additionally, reliability for each pre- and post-test measure was calculated as internal consistency using Cronbach’s Alpha. A value of .70 or greater is considered acceptable for internal consistency (Melnyk & Fineout-Overholt, 2014). Finally, two separate aspects of the

PICOT questions were assessed: 1) participants' level of resiliency pre- and post- training, and 2) participants' knowledge of resiliency pre- and post-training.

Budget

The preparation, implementation, and evaluation phases of the project were used as a guide for developing a proposed budget (Appendix L). The total costs were estimated at $2,717.00 USD. Participants were not compensated for their time. The project was not funded.

Interpretation of Results

Demographic Data

Sex, race, and education. Participants' in the sample ranged in age from 27 years old to 45 years old, with an average age of 37 years old (*SD* = 6.10) (Appendix M). There were more males (*n* = 5) than females (*n* = 1) in the sample. Most participants were married (*n* = 5). All participants were white (*n* = 6). Half of the participants' highest level of education was a bachelor's degree (*n* = 3) and half of the participants' highest level of education was a high school degree (*n* = 3).

Experience and injuries. Only one of the participants had any military experience, a total of three years, and no combat experience, (Appendix M). All participants had at least five years of experience in law enforcement, experience ranged from five to twenty years, with an average of 14.83 years of experience (*SD* = 6.62). Most participants' rank was that of a detective (*n* = 4), and all participants' primary assignment in law enforcement was criminal investigation. Two participants were injured in the line of duty, one of whom reported that the injuries were sustained from a physical assault or criminal action from another individual.

Job related activities. Participants were also asked to estimate the percentage of time on the job spent doing various activities (Appendix N). The highest average percentage of time was

spent on administrative work (mean = 25%) and death-related duties (*M* = 18.33%). No participants spent time on 1) service-related calls involving mentally ill, 2) suicidal subjects, 3) nuisance calls, 4) vehicle or traffic, and 5) other.

Firearm use. Participants were also asked about their firearm usage in the line of duty. All participants reported to having drawn their firearm. However, only one participant discharged a firearm at an object, vehicle, and/or a person. Two participants reported to have been fired at by another person. All participants reported to have engaged in the use of force (Note. it was not possible to calculate the average or frequency of usage for these items regarding firearms because some of the participants did not report the number of times, as instructed in the directions, but rather checked or marked "Yes" or "No").

Previous resiliency training. Finally, participants were also asked about the extent of resiliency training they have received, whether they have sought physical or psychological treatment, and about the support they have received following traumatic event(s). The participants' exposure to resiliency education ranged from it not being a part of their initial training including the academy (*n* = 2) to between 7-8 hours (*n* = 1) over the course of their career. Specifically, while as part of their initial training including the academy, the participants had received 1-2 hours of resiliency education (*n* = 2), after the initial training they had received: no resiliency education (*n* = 1), 1-2 hours (*n* = 1), 3-4 hours (*n* = 1), 5-6 hours (*n* = 1), or 7-8 hours (*n* = 2) of resiliency education.

Support and treatment. Regarding support and treatment for problems related to exposure to a traumatic event or stress, most participants (*n* = 5) did not seek treatment for any physical problems, and no participants (*n* = 6) sought treatment for psychological problems. Furthermore, no participants needed additional time from work to recover from exposure to a

traumatic event at any point over the course of their career. However, most participants (n = 4) felt there was adequate support to address exposure to traumatic events from their employer. None of the participants were more likely to seek support from a peer-run support group than from a group facilitated by a mental health professional.

Measurement Outcomes

Resiliency scores. The RSES was administered prior to and following the resiliency training. All 22 items were scored in positive direction on a 5-point Likert scale (0–4), ranging from 0 = "not at all like me" to 4 = "exactly like me." The resiliency sum scores could range from 0 to 88, where scores from 0-49 indicated low resilience, score from 50-70 indicated moderate resilience, and scores from 71-88 indicated high resilience (Johnson et al., 2011).

Additionally, pre- and post-test responses on the RSES were assessed for internal consistency using Cronbach's Alpha. At pre-test Cronbach's Alpha was .67. Cronbach's Alpha at post-test was .60 (Appendix O). Based on the conventional standard of .70 (Melnyk & Fineout-Overholt, 2014), inter-item reliability was slightly less than satisfactory.

Scores ranged from a minimum of 49 to a maximum of 69 with a median score of 54.50 (Appendix O) where most participants' scores (n = 5) fell within the "moderate resilience" score range. At post-test, scores ranged from 51 to 68 with a median score of 59.50 (Appendix O) where all participants' scores (n = 6) fell within the "moderate resilience" score range. There was no significant difference in the overall resiliency scores between post-test (Mdn = 59.50) and pre-test (Mdn = 54.50), Z = -1.47, p = .141. Additionally, on average, participants' resiliency remained in the moderate range from pre-test to post-test.

Resiliency knowledge. In addition to the RSES as a measure of participants' self-reported resiliency, a measure of resiliency knowledge was also administered prior to, and

following the training where their resiliency knowledge scores were converted to percentage of correct answers. At pre-test, the median number of correct responses was 8.00. This corresponds to approximately 60% correct. The minimum number of correct responses was 4 (33% correct), and the maximum number of correct responses was 9 (75% correct). At post-test, the median number of correct responses was 9.00. This corresponds to approximately 71% correct. The minimum number of correct responses was 5 (42% correct), and the maximum number of correct responses was 10 (83% correct). There was no significant difference in the resiliency knowledge scores between post-test (Mdn = 9.00) and pre-test (Mdn = 8.00), Z = -1.63, p = .102. Although on average, participants' resiliency knowledge did not differ after receiving the resiliency training, all participants reported post-training that they found the information presented to be helpful and that they would likely recommend the training to their colleagues.

Impact of Project

Although LEOs did not demonstrate significant improvements in resiliency and resiliency knowledge post intervention there was a sample-based increase in both resiliency and resiliency knowledge. The Resiliency Training taught LEOs adaptive coping skills to better manage emotional and physiological responses to traumatic events. Improving resiliency knowledge can increase LEOs' awareness of the negative impact associated with frequent exposure to work-related trauma while emphasizing the importance of accessing mental health treatment early and throughout their careers to promote health and well-being. Adaptive coping skills can potentially enhance resilience toward improving safety of LEOs and of those around them at work and at home. In the future, the Resiliency Training will be adopted and implemented throughout LEOs' career within the organization. The goal is to continually provide staff development opportunities that better equip LEOs to cope with work-related trauma and stress.

Supporting the health and wellness of LEOs is vital for promoting resilience and career longevity. Preventative interventions can help organizations maximize cost savings by decreasing recruitment and training costs due to high attrition rates. Increasing resilience and promoting openness to seek psychological help before a mental health concern deteriorates into a mental illness can help agencies and society avoid significant costs associated with the treatment and management of a severe mental illness. Fostering an overall positive mental health culture among LEOs can reduce attrition rates, burnout, health care costs, disability claims, accidents, premature medical retirements, and mortality.

Discussion

Six rural law enforcement officers completed resiliency training. All participants listed criminal investigation as their primary assignment. Most of the participants were white males, with varying years of experience ranging from five to twenty years in law enforcement. Participants completed two measures prior to the training: a measure of resiliency (RSES) and a measure of resiliency knowledge. Participants then completed the same two measures following the training session in order to analyze the impact of the resiliency training. There were no significant differences observed in pre- and post-test scores on either of the measures. Participants' resiliency did not significantly increase following the training. Rather, participants exhibited moderate resiliency - both pre- and post-test - indicating that participation in resiliency training did not affect resiliency scores. Also, participants' knowledge of resiliency did not significantly increase from pre- to post-test indicating that participation in a resiliency training did not affect the resiliency knowledge scores.

Conclusion

The outcomes could be explained by the limited sample size ($N = 6$), and a potentially small effect size. It might be the case that in this sample the resiliency training leads to an increase in participants' resiliency and resiliency knowledge scores, but the sample size may be too small for the test to detect it. A larger sample size, at least 30, is likely to increase the probability of detecting this effect if it truly exists and lead to greater confidence in the outcomes. Also, including additional relevant questions in the resiliency knowledge measure is likely to lead to a greater effect size.

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Appendix A

Evaluation Table

Table A.1

Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
Anderson et al., (2016). A training method to improve police use of force decision-making: A randomized controlled trial. **Funding:** No financial support. **Bias:** None **Country:**	Neurobiology and Learning Theory	**Design:** RCT **Purpose:** Improved use of force decisions during critical incidents.	N=12 n TRT = 6 n CNTL = 6 **Setting:** Police University College of Finland campus **Sample Demographics:** 12 Caucasian m, M age of 31.5, M police service 4.68 years, M SRT 2.8 years **Inclusion Criteria:**	**IV1:** 3 days of "**iPREP training"** **IV2: "TAU"** **DV1:** SA (DH & WH) **DV2:**Use of force decisions **DV3:** Physiological arousal (HR) **DV4:** SRS **Definitions: "iPREP training"** a) education about the	Maximum HR, BP, 10-point scale appropriate of decision making, and self-reported surveys.	Shapiro–Wilk test, independent samples t tests, Mann–Whitney U tests, Fisher's exact chi-square tests, t-tests, and Cohen's *d*. two expert raters coding, Statistical analysis conducted using PASW V 20.	**DV1:** TRT performed significantly better than CNTL (DH) t (10) = 4.838 p = .001 d = 2.79 (WH) t(10) = 5.406 p = < .000 d = 3.12 **DV2:** TRT performed significantly better than CNTL t (10) = 4.025	**LOE:** I **Strengths:** SRT trainers were blinded to study questions, random assignment to reduce small n failure, reliable instruments and outcome variables measured during multiple scenarios. **Weaknesses:** Small sample size, self-report measures, and incomplete data. **Conclusions:** Resilience education with use of force training improved SA, performance, and a greater number of correct use of force decisions.

Key: AC – academic settings; **AfAm** – African American; **ALT** – altered; **ANOVA** – analysis of variance; **AR** – autonomic response; **BMT** – brief mindfulness training; **BP**– blood pressure; **α** – Chronbach's alpha; **CBT** – Cognitive Behavioral Therapy; **CC** – correlation coefficient; **CI** – confidence interval; **CNTL** – control group; **CTSA** – clinical and translational science award; **CV** – cardiovascular; **CVD** –cardiovascular disease; **DASP** – data analytic software package; **DH** – drug house; **DQ** – descriptive qualitative; **DS** – descriptive statistics; **DV** – dependent variable; **EMDR** – Eye Movement Desensitization and Reprocessing; **ES** – effect size; CISD– crisis intervention stress debriefing; **EXP** – experience; **FB** – fairly bad; **FBI** –Federal Bureau of Investigations; **FG** – fairly good; **FL** – Florida; **FR -** First Responder; **HBA1C** – glycated hemoglobin **HCL** – Hypercholesterolemia; **HR** – heat rate; **HRV** –heart rate variability; **HTN** – high blood pressure; **iPREP** – international performance resilience and efficiency program; **I** – independently; **IV** – independent variable; **K** score – interater reliability; **LOE** – level of evidence; **M** – mean; **MA** – meta-analysis; **MBRT** – Mindfulness-Based Resilience Training; **MM** – mixed method; **MPD** – Milwaukee Police Department; **n** – group sample size studies; **N** – total number of participants; **NCATS** – National Center for Translational Science ; **NRNCT** – non-randomized control trials; **OES** – open ended survey questionnaire; **OR** – Operation Restore; **P** – p value; **PA** – police academy; **PASW**– predictive analytics software; **PCL** – posttraumatic checklist; **PHQ-9**– patient health questionnaire; **PHYS** – physiological; **PR** – performance ratings; **PS** – parasympathetic ; **PSYCH** – psychological; **PT** – physical training; **pt**. – patient; **PTGI** – Posttraumatic Growth Inventory; **PTSD** – Posttraumatic Stress Disorder; **Q** – question; **RCT** – randomized control trials; **RS** – random sample; **RTI** – resilience training interventions; **SA** – situational awareness; **SE** – standard error; **SQ** – sleep quality; **SR** – systematic review; **SRS** – self reported stress; **SRT -** Special Response Team; **TAU** – training as usual; **TM** – telementor; **TRT**– treatment group; **USA** – United States of America; **V** – version; **VG** – very good; **W** – white; **WH** – warehouse; **WI** – Wisconsin; **WKS** – week

Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
Finland			Gender, close in age, SRT ~ 2 years EXP, prior training exposure, **Attrition:** 1 **(**17%)	physiology of the stress response (b) SA in performance and non-performance settings; (c) instruction and use of biofeedback to practice engaging in controlled breathing exercises stress **"TAU"** shooting targets, active PT, and undercover pursuit of criminals			p < .01 *d* = 2.32 **DV3:** TRT HR were lower than CNTL t = - 4.30 p < .003 d = - 2.72 **DV4:** M scores ranged from 5.33 – 8.33 on 10 point scale, CNTL reported higher levels of confidence than TRT p < .05	**Feasibility/ Applicability to pt. population:** Recommended for use in FRs due to effectiveness in improving SA, performance, and psychophysiological control**.**
Citation	**Conceptual Framework**	**Design/Method**	**Sample/Setting**	**Major Variables & Definitions**	**Measurement**	**Analysis**	**Findings**	**Decision for Use**

Key: AC – academic settings; **AfAm** – African American; **ALT** – altered; **ANOVA** – analysis of variance; **AR** – autonomic response; **BMT** – brief mindfulness training; **BP**– blood pressure; **α** – Chronbach's alpha; **CBT** – Cognitive Behavioral Therapy; **CC** – correlation coefficient; **CI** – confidence interval; **CNTL** – control group; **CTSA** – clinical and translational science award; **CV** – cardiovascular; **CVD** –cardiovascular disease; **DASP** – data analytic software package; **DH** – drug house; **DQ** – descriptive qualitative; **DS** – descriptive statistics; **DV** – dependent variable; **EMDR** – Eye Movement Desensitization and Reprocessing; **ES** – effect size; CISD– crisis intervention stress debriefing; **EXP** – experience; **FB** – fairly bad; **FBI** –Federal Bureau of Investigations; **FG** – fairly good; **FL** – Florida; **FR** - First Responder; **HBA1C** – glycated hemoglobin **HCL** – Hypercholesterolemia; **HR** – heat rate; **HRV** –heart rate variability; **HTN** – high blood pressure; **iPREP** – international performance resilience and efficiency program; **I** – independently; **IV** – independent variable; **K** score – interater reliability; **LOE** – level of evidence; **M** – mean; **MA** – meta-analysis; **MBRT** – Mindfulness-Based Resilience Training; **MM** – mixed method; **MPD** – Milwaukee Police Department; **n** – group sample size studies; **N** – total number of participants; **NCATS** – National Center for Translational Science ; **NRNCT** – non-randomized control trials; **OES** – open ended survey questionnaire; **OR** – Operation Restore; **P** – p value; **PA** – police academy; **PASW**– predictive analytics software; **PCL** – posttraumatic checklist; **PHQ-9**– patient health questionnaire; **PHYS** – physiological; **PR** – performance ratings; **PS** – parasympathetic ; **PSYCH** – psychological; **PT** – physical training; **pt**. – patient; **PTGI** – Posttraumatic Growth Inventory; **PTSD** – Posttraumatic Stress Disorder; **Q** – question; **RCT** – randomized control trials; **RS** – random sample; **RTI** – resilience training interventions; **SA** – situational awareness; **SE** – standard error; **SQ** – sleep quality; **SR** – systematic review; **SRS** – self reported stress; **SRT** - Special Response Team; **TAU** – training as usual; **TM** – telementor; **TRT**– treatment group; **USA** – United States of America; **V** – version; **VG** – very good; **W** – white; **WH** – warehouse; **WI** – Wisconsin; **WKS** – week

Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
Banks et al., (2015). An overview of the research on mindfulness-based interventions for treating symptoms of posttraumatic stress disorder: A systematic review. **Funding:** Falkirk Community Hospital **Bias:** Cultural Bias **Country**:	Cognitive-Behavioral	**Design:** SR **Purpose:** Evaluate mindfulness interventions to treat PTSD	**N**=12 **DS:** Search conducted on 10/14 EMBASE (1980-2014), OVID (1946-2014), MedLine (1946-2014), Psycinfo (1806-2014), CINAHL (1871-2014), & PILOTS (1871-2014) **Inclusion Criteria:** Intervention is mindfulness-based, over age 18, reliable & validated outcome measure of PTSD pre/post, published in English.	**IV:** Mindfulness Based Interventions **DV:** PTSD symptoms **Definition: "Mindfulness-Based Intervention"** CBT, meditation, experiential exercises, breathing, & movement.	Clinician Administered PTSD Scale, Posttraumatic Symptoms Scale, Emotion Regulation Questionnaire, & Assessment of PTSD.	Studies were reviewed according to Downs and Black Quality Criteria Checklist, a second rater a qualified consultant clinical psychologist, rated three papers, selected to represent different degrees of quality, to measure inter-rater reliability. Studies were fully anonymized so that the second rater	**DV:** A majority of the results demonstrated improvement in PTSD symptoms post-intervention with sustained long-term outcomes.	**LOE:** I **Strengths:** Specifically focused on mindful-based intervention outcomes for PTSD, findings were consistent in studies, quality index was specified as good, outcome measures were robust, validated, & reliable with inter-rater validity. **Weaknesses:** Trauma populations varied in severity of PTSD symptoms & diagnosis. **Conclusion:** Mindful-based interventions improved PTSD symptoms. **Feasibility/Applicability to pt population** Mindfulness based interventions are effective for decreasing PTSD symptoms in adults.

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USA, North America, & Europe			**Exclusion Criteria:** Mixed intervention studies, specific types of meditation: (transcendental, loving kindness, & mantrumbased) qualitative analysis only, lack of reliable & validated outcome measure of PTSD pre/post **Attrition:** 4%-49%			was blind to the publication authors and journal to reduce any potential bias. Cohen's kappa (κ) indicated a substantial level of agreement between the raters (κ= 0.79).		
Citation	**Conceptual Framework**	**Design/Method**	**Sample/Setting**	**Major Variables & Definitions**	**Measurement**	**Analysis**	**Findings**	**Decision for Use**
Boothroyd et al., (2018). Evaluation of operation	Critical Incident Stress Management Model	**Design**: MM – (NRNCT) & (pre/posttest) &	N=207 **Setting:** Franciscan	**IV**: OR retreat "a brief PTSD intervention".	**NRNCT:** Modified PTGI (α =.92)	**NRNCT:** Independent *t*-tests, one-way	**NRNCT:** Post treatment	**LOE:** II **Strengths:** A paired *t*-test was used to compare PTGI

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restore: A brief intervention for first responders exposed to traumatic events. **Funding:** Franciscan Center of Tampa Bay, FL. B**ias:** Selection Bias **Country:** USA		DQ (OES questionnaire) **Purpose:** To assess PTGI scores in FRs after OR, a brief PTSD intervention in Tampa Bay, FL	Center, Tampa Bay, FL. **Sample Demographics:** 33.3% f, 66.7% m) 24 to 61 years with a M age of 42.35, Caucasian = 77.8%, AfAm = 13%, Hispanic = 8.7%. 27.5% self-identified as veterans. Occupations: 72% police officers, 16% firefighters, 6% EMS, 1.9% 911 operators, 1.9% dispatchers, and 1.4% FBI. **Inclusion Criteria:** FRs exposed to	**DV1:** Pre-PTGI Scores **DV2**: Post-PTGI Scores **Q1:** What were FRs perception of OR? **Definition: "Brief PTSD Crisis Intervention"** Stress Debriefing is used over 3-4 days with FRs exposed to traumatic events to lessen the impact.	**DQ:** OES questionnaire (K = .67)	ANOVA, Pearson Product Moment Correlation, Multiple Linear Regression, Cohen's *d* **DQ:** OES theme content was analyzed using Dedoose a DASP. A RS of three OES transcripts were I coded by two evaluators.	PTGI scores were higher ($p < .001$). **DV1:** M=2.74 $p < .001$ **DV2:** M=3.43 $t(206) = 93$, $p < .01$ ES: 1.45 **DQ:** **Theme 1:** Lessons learned **Theme 2:** Retreat evaluation **Theme 3:** PTSD	scores pre/post showed a statistically significant increase in scores. Cohen's *d* scores pre/post represented a large effect. Qualitative data and quantitative data were appropriately analyzed. **Weaknesses:** Self- selection, lack of a CNTL, and a modified version of PTGI. **Conclusions:** The result showed that FRs had a positive increase in PTGI scores from pre/post intervention. DQ results indicate relief of PTSD symptoms through increased emotional regulation. **Feasibility/ Applicability to pt. population:** The intervention described is feasible and recommended for use in practice with FRs due to positive gains maintained in treating PTSD.

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			traumatic events that participated in one OR more retreats between 2013-2018. **Attrition:** 2 (1%)					
Citation	**Conceptual Framework**	**Design/Method**	**Sample/Setting**	**Major Variables &**	**Measurement**	**Analysis**	**Findings**	**Decision for Use**
Kaplan et al., (2017). Role of resilience in mindfulness training for first responders. **Funding:** Pacific University **Bias:** Response bias **Country:** USA	Inferred to be Cognitive-Behavioral	**Design:** MM – (NRNCT) & (pre/posttest) & DQ (Mindfulness questionnaire) **Purpose:** Examine the effect of MBRT on resilience, mindfulness, and burn out	N=69 n fire-fighter = 22 n police = 47 **Setting:** Pacific University Wellness Center **Sample Demographics:** Police n=47, 57% m, M age 43.53, 81% Euro-American,	**IV:** Mindfulness-Based Resilience Training (MBRT) **DV1:** (pre/post) Resilience **DV2:** (pre/post) Burnout **Q1:** Does resilience mediate the	**NRNCT:** Brief Resilience Scale pre-MBRT α =.87; post-MBRT α = .90 Oldenburg Burnout Inventory pre-MBRT α =.85; post-MBRT α = .88 **DQ:**	**NRNCT:** Nonparametric bias-corrected bootstrapping with 10,000 resamples testing indirect effect and statistical significance, adhoc power analysis, mediation model tested	Changes in resilience partially mediated the relationship between mindfulness & burnout & increased mindfulness was related to increased resilience pre/post in both fire fighters & police	**LOE**: II **Strengths:** Outcomes consistent with other findings for resilience as key mechanism of change for stress and burnout. **Weaknesses:** Small sample size impacts power & generalizability, no control group, causality cannot be made. **Conclusions:**

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			13% Latino, 6% other, yrs on the force 13.28 Fire Fighters n=22, 73% m, years on the force 13.67, 90% Euro-American, 4% multiracial, 4% Asian, 2% AfAmer **Inclusion Criteria:** Human subjects approved through the Pacific University IRB, police and fire fighters in the Pacific Northwest **Attrition:** 0%	relationship between increases in specific facets of mindfulness and decreased burnout? **Definition: "MBRT"** 8-WK 2 hour course with experiential, didactic exercises; including body scan, sitting, walking meditations, & mindful movement.	Five Faucet Mindfulness Questionnaire pre-MBRT α =.82; post-MBRT α = .88	with process macro for SPSS version 22 **DQ:** Exploratory mediation analysis	**DV1:** (b=.41, SE =.11, p < .01) which in turn related to a decrease in burnout **DV2:** b= -.25, SE=.12, p = .03 **Theme 1:** Non-reactivity **Theme 2:** Non-judging Theme 3: **Acting with Awareness**	Increasing mindfulness can improve resilience and decrease burnout. **Feasibility/Applicability to pt population:** MBRT is a recommended intervention for first responders to mitigate negative impact of negative stressors.

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Devilly et al., (2013). The prevention of trauma reactions in police officers: Decreasing reliance on drugs and alcohol. **Funding:** National Drug Law Enforcement Research Fund **Bias:** Attrition & Publication Bias **Country:**	Inferred to be Cognitive-Behavioral	**Design:** RCT **Purpose:** Develop and evaluate a resiliency training program designed specifically to help new recruit police officers mitigate stress reactions.	**N=281** n TRT =141 n CNTL = 140 **Setting:** Victoria Police academy **Sample Demographics** n TRT = 68 m, 73 f, M age 28, 19-50 years old n CNTL = 76 m, 64 f, M age 28.8, 19-60 years old **Inclusion Criteria:** Male & female recruits for the Victoria Police Department **Attrition:** 10%	**IV:** Resilience training program **DV1:** Health and Wellbeing **DV2:** Affective Distress **DV3:** Trauma Exposure/Symptomology **Definition: "Resiliency training"** 8 WKS thought challenging questions, activating event, Belief, consequence worksheet,	Depression Stress, & Anxiety Scale - 21 item α pre/post = .94, .87, Distress Endorsement Validation Scale (α = 0.84), Credibility / Expectancy Questionnaire (α = 0.84 - 0.85)	Analyses were conducted using Statistical version 6.1 and Clinical Tools Version 4, repeated ANOVA, effect size, Hedges g, Spearman rank correlations	**At 6 months** **DV1:** Resilience training demonstrated a significant increase in health over time in the TRT group. ($F(1, 278)=4.63$, $p<0.04$), and this represented a small effect size (Hedges' $\hat{g}=0.14$, 95% CI: -0.30, -0.03). When compared to the CNTL group the	**LOE:** I **Strengths:** There is a strong positive relationship between stressors and symptoms for the control condition, this was greatly reduced or eradicated for the resilience condition. **Weaknesses:** Follow-up at 6 months may not have accurately depicted sustained results, a larger sample size may have detected very small effects, & test-retest liability was low. **Conclusions:** There is a relationship between trauma symptoms & substance involvement. Resilience training can decrease trauma symptoms.

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Australia				guided self dialogue, calm breathing exercises, muscle relaxation, how to recognize problem drinking worksheet			TRT group demonstrated a decrease in effective distress. **DV2:** M decrease of affective distress =1.15 **DV3:** Resilience training may have had an effect on the relationship between trauma exposure and trauma expression, with exposure having less of an effect on trauma symptomatol ogy than for	**Feasibility/Applicability to pt population:** Resiliency training can mitigate the negative effects of trauma in FRs.

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							the control group. nCNTL;R(s) =0.24, N=111, p=0.01 nTRT;; R(s)=0.11, N=118, p=0.25 R	
Citation	**Conceptual Framework**	**Design/Method**	**Sample/Setting**	**Major Variables & Definitions**	**Measurement**	**Analysis**	**Findings**	**Decision for Use**
Patterson et al., (2014). Stress management interventions for police officers and recruits: A meta-analysis.	Inferred to be Cognitive-Behavioral	**Design:** MA **Purpose:** Examine the effects of stress management interventions in police and recruits.	**N=1**2 studies **n=**906 participants **Sample Demographics:** M age 34.48, 10.77 years of police experience. **DS:** Specific names of DS	**IV:** Stress Management Interventions **DV1:** Physiological **DV2:** Psychological **DV3:** Behavioral	Police Stress Survey (α not reported), Police Daily Hassles(α =.77 -.93), Police Daily Uplifts (α =.52 - .92), Operational Police Stress Questionnaire (α =.90),	MA was performed using Comprehensive MA Version 2.2.050, effect sizes were separated out by outcome type,	**DV1:** Hedges g=0.196, p>.05, 95 % CI=−0.187, 0.578 **DV2:** (Hedges g=0.038, p>.05, 95 % CI=−0.155, 0.230)Over	**LOE:** I **Strengths:** Nine of the studies reviewed represent high quality regarding internal validity. Heterogeneity was observed in physiological results across three studies and psychological results contributing to a larger common effect.

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Funding: National Policing Improvement Agency, Campbell Collaboration Crime, Justice Group, & George Mason University **Bias:** None recognized **Country:** USA, Netherlands, Canada, Australia			were not mentioned. 35 databases were hand searched involving journals, books, conferences, websites, organizations, & relevant citations was conducted ranging from 8/1/09-5/31/10. **Inclusion Criteria:** Veteran police officers, police recruits, and/or civilian (non-sworn) police personnel) or quasi-experimental designs that included a control group, a	Duration of Stress Management interventions were 10.95 hours, range 30 minutes to 24 hour**s**	Organizational Police Stress Questionnaire (α =.90).	multiple outcomes were averaged. effect sizes were not averaged across different outcome types, effect sizes were calculated using reported means, standard deviations & sample sizes. Some effect sizes were calculated using Hedges g, Cohen's d and t-test results.	all M effect = **.**038 **DV3:** (Hedges g=−0.176, p>.05, 95 % CI=−0.719, 0.367)	**Weaknesses:** The interventions varied with the outcomes and inconsistencies were noted in measurement approaches. **Conclusions:** A specific intervention needs to address specific types of stress. Agencies need to evaluate stress interventions and outcomes. **Feasibility/Applicability to pt population:** Specific organizational stressors may not be feasible to address involving workload, shift work, and excessive paperwork. Targeting specific stressors using interventions to achieve desired outcomes for reducing stress is recommended in FRs.

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			psychosocial or other type of stress management intervention, quantitative outcomes although studies that utilized qualitative methods (focus groups, interviews) were included as long as these studies focus on the interventions examined in the RCT studies, & published and non-published studies conducted in any geographic location. **Attrition:**					

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			Not discussed.					

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Ramey et al., (2016). Building resilience in an urban police department. **Funding:** Pilot A funded by the National Institute of Occupational Safety and Health. Pilot B funded by USA Department of Justice. **Bias:**	Specific operational stress control	**Design:** RCT **Purpose:** Examine RTI impacts on AR to stress and improve CV risk, psych, & phys outcomes	N=38 n TRT=20 (Pilot A) n CNTL=18 (Pilot B) **Sample Demographics:** TRT= M age – 24.4 m/f– 82.4%/0 AfAm – 29.4% W – 58.8% Exercise – 100% HTN – 17.7% HCL – 5.9% SQ: VG – 11.8% FG – 82.4% FB – 5.9%	**IV1:** 2 hr "education class"+"men-toring component" + additional session for alt. breathing/HR **IV2:** 2 hr education class **DV1**: HbA1c **DV2:** Self-reported stress **DV3:** HRV	Perceived Stress Scale ($\alpha = 0.75$) Maastricht Questionnaire 9-item Form B ($\alpha = 0$ .83) Impact Events Scale ($\alpha = 0.87$) Personal and Organizational Quality Assessment $\alpha = (0.76\text{-}0.92)$ Response to Stressful	HRV analyzed with Kubios HRV software, Cohen's d, Pearson's CC, ANOVA, two-sided t-test	**DV1:(**r= -.66, p < .001, n = 26) **DV2:** (r= -.44, p= .03, n=24) **DV3:** M PS component increased by 2.5 on work days (p= .03, d= 0.43), off workdays by 2.6 days p=.03, d=.43).	**LOE:** I **Strengths:** RCT design, reliable instruments, and n=10 participants in education class to promote participation. **Weaknesses:** Retention of participants in Pilot A was higher, high variability in outcomes, and small number of participants. **Conclusions:** Resiliency education can improve CVD risk factors by improving HRV. **Feasibility/ Applicability to pt. population:**

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Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
Attrition Bias in Pilot B **Country:** USA			CNTL= M age – 27 m/f – 82.4%/0 AfAm – 5.9% W – 88.2% Exercise – 100% HTN – 35.3% HCL – 23.5% SQ: VG – 17.7% FG – 52.9% FB – 29.4% **Setting:** PA for MPD located in Milwaukee, WI **Inclusion Criteria:** PA recruits for MPD. **Attrition:** 2 (5%)	**Definition:** **"Education class"** Resiliency education includes: triggers of stress/ awareness, modifying AR, & focusing on the positive. **"Mentoring component"** 4 tm sessions, every 2-3 wks	Experiences Scale α = (0.91-0.93) HR monitors A non-fasting blood sample Health/Lifestyle questionnaire			Recommended for use in practice with FRs due to effectiveness of intervention.

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Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
Citation	**Conceptual Framework**	**Design/Method**	**Sample/Setting**	**Major Variables & Definitions**	**Measurement**	**Analysis**	**Findings**	**Decision for Use**
Possemato et al., (2017). A randomized control trial of primary care brief mindfulness training for veterans with PTSD. **Funding:** Syracuse VA Medical Center **Bias:** Attrition bias in TRT group. **Country:** USA	Inferred to be Cognitive Behavioral	**Design**: RCT **Purpose:** Test if BMT can decrease the severity of PTSD symptoms and depression	N=62 nTRT= 36 nCNTL= 26 **Setting:** Syracuse NY VA Medical Center **Sample Demographics:** 87.1% m, 12.9% f, M age 46, W=82.3% H=3.2% Diagnostic level PTSD=48% Sub-threshold PTSD=52% **Inclusion Criteria:** Enrolled in VA for services, adults, at least a	**IV1:** BMT **IV2**: TAU **DV1:** PTSD **DV2**: Depression **Definition:** **"BMT"** is 4, 90 minute sessions sitting medication, body scan, moving meditation, gentle yoga & group discussions. **"TAU"** is a PTSD psycho educational class	PCL-5 α = (0.90-0.95) PHQ-9 α = (0.87-0.90)	ANOVA using SPSS version 22, bootstrap sample used to replace original TRT sample calculating the indirect effect 5000 times, Cohen's *d*, intent to treat analysis, Rosenthal's formula, estimation maximizatio n algorithm.	At 8 WKS the TRT group demonstrated significant improvement when compared to the CNTL **DV1:** F(2,39)=2.1, p = .16 d = .45 **DV2:** F (1,40) = 4.1 p =.03 d= .99	**LOE:** I **Strengths:** RCT and reliable instruments. Describing internal experiences were thought to contribute to a decrease in PTSD symptoms that are consistent findings with previous research and theoretical evidence. **Weaknesses:** Low participant engagement in BMT due to poor understanding of purpose and contents**.** Significant for working with populations with trauma history to promote buy-in. F results not discussed. Low n resulting in diminished statistical power. **Conclusions:** BMT decreased depression and

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Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
			score of 31 on PCL-5, and DSM-V qualifying criterion A for a traumatic event. **Attrition:** May have failed to achieve statistical significance consequent to attrition.					anxiety from pre to post intervention. Outcomes were maintained at 8WKS. **Feasibility/ Applicability to pt. population:** Described as feasible and recommended in practice due to effectiveness for treating pts with PTSD.
Citation	**Conceptual Framework**	**Design/Method**	**Sample/Setting**	**Major Variables & Definitions**	**Measurement**	**Analysis**	**Findings**	**Decision for Use**
Shand et al., (2019). Resilience@work mindfulness program: Results from a cluster randomized controlled trial	Inferred to be Cognitive-Behavioral	**Design**: RCT **Purpose:** Examine if a mindfulness resilience training program delivered via internet can	**N**=544 n TRT= 268 n CNTL= 272 **Setting:** Fire and Rescue Station in New South Wales **Sample Demographics:**	**IV:** Mindfulness Resilience Training **DV:** Resilience **Definition:** **"Resiliency@ Work"**	Connor-Davidson Resilience Scale α = .81-.88 Brief Resilience Scale α= .86-.90	Intent to treat, mixed method repeated measures, group by time interaction, priori planned per protocol	At 6 months **DV:** n TRT compared to n CNTL group (p = .002) resilience scores	**LOE:** I **Strengths:** Strong statistical methods, results consistent with other studies. **Weaknesses:** High prevalence of males resulting in lack of generalizability

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Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
with first responders. **Funding:** Australian Government Research Training Program Scholarship & University New South Wales Brain Sciences PhD Grant **Bias:** Attrition bias **Country:** Australia		enhance resilience among high-risk workers.	nTRT= 93% m, 7%f, M age 43.9, Years of service as a fire fighter 1-5; 8% 6-10; 22% 11-15; 18% 16-20; 10% 20+; 42% nCNTL= 81% m, 2%f, M age 41.1, Years of service as a fire fighter 1-5; 11% 6-10; 33% 11-15; 29% 16-20; 7% 20+; 20% **Inclusion Criteria:** 24 Fire and Rescue Departments at New South Wales	teaches self-compassion and acceptance skills, 6 online training sessions, 25 minutes each		analysis, two sided alpha level, analyses completed on SPSS version 24	increased 1.3= moderate-to-large effect size with n CNTL group of .73(CI: .38-1.06)	**Conclusions:** Resilience scores improved from pre to post follow-up with mindfulness training. **Feasibility/ Applicability to pt. population:** The resiliency based on-line intervention Resiliency@Work is recommended due to the effectiveness for improving resilience in FRs.

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Citation	Conceptual Framework	Design/Method	Sample/Setting	Major Variables & Definitions	Measurement	Analysis	Findings	Decision for Use
			Attrition: Decreased engagement during follow-up.					
Tuckey et al., (2013). Group critical incident debriefing with emergency service personnel: A randomized control trial. **Funding:** Work & Stress Research Group, Centre for Applied	Critical Incident Stress Management Model	**Design**: RCT **Purpose:**	N=67 n= 6-20 participants randomly assigned to 3 groups. nTRT= CISD nTRT = Stress MGT Education nCNTL=Screening **Setting:** Australian Fire -Fighter Brigade **Sample Demographics:**	**IV1:** CISD **IV2:** Stress Management Education **IV3:** Screening **DV1:** PTSD **DV2:** Nonspecific Psychological Distress **DV3:** Quality of Life **DV4:** Alcohol Consumption **Definition:**	Impact of Events Scale Kessler 10, Quality of Life Enjoyment & Satisfaction Questionnaire-Short Form, Alcohol Consumption	One-way ANOVA, randomization, t-test, multileving software, & DS	**DV1:** PTSD scores pre/post were low in all three groups, ranging from 0 - 8.75 at baseline and 0 - 5.21 at follow-up **DV2:** Nonspecific Psychological Distress Scores pre/post; 0-16, 0-18	**LOE:** I **Strengths:** Took place in a real world setting contributing to good external validity **Weaknesses:** Varied alcohol use among participants, self report data, lacking a standard alcohol screening tool, over-representation of men in sample, female results not reported. **Conclusions:** Education phase increased group processing improving peer and social resources**.**

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Psychological Research **Bias:** Attrition Bias **Country:** Australia			91% m, average time on the job 13 years **Inclusion Criteria:** Fire-fighters with secondary exposure to traumatic event from 9/07 -2/09 **Attrition:** Information attrition post intervention surveys not returned	**"Stress Management Education"** 90 minute workshop teaching recognizing stress, self care, PTSD symptoms, treatment, & comorbidity of trauma.			**DV3:** Quality of Life pre/post; rated (satisfying/ satisfying). **DV4:** Fire fighters in the CISD group reported significant lower alcohol consumption when compared to the other groups. Alcohol Consumption pre/post; $F(2,52)=$ 3.48, $p<.05$, $F(2,52)= 4.78$ & $p <.05$	CISD was effective for decreasing alcohol consumption. **Feasibility/ Applicability to pt. population:** CISD is an effective intervention for decreasing alcohol consumption and improving quality of life.

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Appendix B

Synthesis Table

Table B.1

Author	Anderson et al.	Banks et al.	Boothroyd et al.	Kaplan et al.	Devilly et al.	Patterson et al.	Ramey et al.	Possemato et al.	Shand et al.	Tuckey et al.
Year	2016	2015	2018	2017	2013	2014	2016	2017	2019	2013
Design/Level of Evidence:	RCT/I	SR/I	MM/II	MM/II	RCT/I	MA/I	RCT/I	RCT/I	RCT/I	RCT/I
N =	12	12 studies	207	69 22 FF 47 police	281	906 12 studies	38	62	544 FF	67 FF
Study Characteristics										
Demographics										
M age	31.5	NR	42.35	43.5 – police NR FF	28	34.48	24.4	46	43.9	
M years police service	4.68			13.28	New Recruits	10.77	New Recruits			
M years FF service				13.6						13
Males (%)			66.7	57- police 73 - FF	68		82.4	87.1	93	91
Females (%)			33.3	NR	73		NR	12.9	7	NR
Caucasian			77.8	81- police 90 - FF			58.8	82.3		
AfAm (%)			13	2 - FF			29.4			
Asian (%)				4 - FF						
Hispanic (%)			8.7	6 - police				3.2		
Multiracial (%)				4 - FF						
Police (%)			72							
FF (%)			6							

Key: AfAm – African American; **BP** – blood pressure; **BRS** – brief resilience scale; **CA** – clinician administered; **CBT** – cognitive behavioral therapy; **DEVCEQ** – distress endorsement validation credibility/expectancy questionnaire **DX** – diagnosis; **ERQ –** emotion regulation; questionnaire **EXP** – exposure; **FF** – fire fighter**; FFMQ –** five faucet mindfulness questionnaire**; HLQ –**health/lifestyle questionnaire; **HR** – heart rate; **IES –** impact events scale**; iPREP** – international performance resilience and efficiency program; **M –** mean**; MA –** meta-analysis**; MBRT** – Mindfulness-Based Resilience Training**; MM –** mixed method**; N** –total number of participants; **NR –** not reported; **OBI –**Oldenburg burnout inventory; **OPPS** – operational police stress questionnaire; **PCL** – posttraumatic checklist; **PHQ-9** – patient health questionnaire; **POQA** – personal organizational quality assessment; **PHYS –** physiological; **PSS** – posttraumatic symptoms scale; **PSYCH** – psychological; **PTSD** – posttraumatic stress disorder**; PTGI –** Posttraumatic Growth Inventory**; RSES –** response to stressful experiences scale; **RCT –** randomized control trial; **SR** – systematic review; **ST** – sub-threshold; **USA –** United States of America

Medic (%)			1.9							
911 Operator (%)			1.9							
Veterans (%)			27.5					68		
PTSD Dx (%)								48		
ST PTSD Dx (%)								52		
Exp to Secondary Trauma (%)										67
Setting										
USA		X	X	X		X	X	X		
Finland	X									
North America		X								
Europe		X								
Canada						X				
Australia					X				X	X
Netherlands						X				
Measurement Tools	HR, BP, & 10-point scale appropriate of decision making, and self-reported surveys	CA PTSD Scale, PSS, ERQ, Assessment of PTSD.	PTGI	BRS, OBI, FFMQ	Depression Stress, & Anxiety Scale - 21 item, DEVCEQ	PSS Police Stress Survey, Police Daily Hassles, Police Daily Uplifts, OPPS, Organizational Police Stress Questionnaire	Perceived Stress Scale, Maastricht Questionnaire 9-item Form B, IES, POQA, RSES, HR, a non-fasting blood sample, HLQ	PCL-5 PHQ-9	Connor-Davidson Resilience Scale, BRS	IES Kessler 10, Quality of Life Enjoyment & Satisfaction Questionnaire-Short Form, Alcohol Consumption
Duration of Intervention	3 days		3-4 days	8 weeks/ 2 hours a day	8 weeks	10.9 hours	2 hours	4 sessions; 90 minutes each	6 sessions; 24 minutes each	90 minutes
Interventions										
iPREP training	X									
Stress Debriefing			X							X
MBRT		X		X	X		X	X	X	

Key: AfAm – African American; **BP** – blood pressure; **BRS** – brief resilience scale; **CA** – clinician administered; **CBT** – cognitive behavioral therapy; **DEVCEQ** – distress endorsement validation credibility/expectancy questionnaire **DX** – diagnosis; **ERQ –** emotion regulation; questionnaire **EXP** – exposure; **FF** – fire fighter**; FFMQ –** five faucet mindfulness questionnaire**; HLQ –**health/lifestyle questionnaire; **HR** – heart rate; **IES –** impact events scale**; iPREP** – international performance resilience and efficiency program; **M –** mean**; MA –** meta-analysis**; MBRT** – Mindfulness-Based Resilience Training**; MM –** mixed method**; N** –total number of participants; **NR –** not reported; **OBI –**Oldenburg burnout inventory; **OPPS** – operational police stress questionnaire; **PCL** – posttraumatic checklist; **PHQ-9** – patient health questionnaire; **POQA** – personal organizational quality assessment; **PHYS –** physiological; **PSS** – posttraumatic symptoms scale; **PSYCH** – psychological; **PTSD** – posttraumatic stress disorder**;** **PTGI –** Posttraumatic Growth Inventory**; RSES –** response to stressful experiences scale; **RCT –** randomized control trial; **SR** – systematic review; **ST** – sub-threshold; **USA –** United States of America

Stress Management Training						X				X
Dependent Variables										
Situational Awareness	X									
Use of Force Decision Making	X									
PTSD Symptoms		X	X		X			X		
Burn Out				X						
Phys & psych responses to stress						X	X			
Resiliency									X	
Quality of Life										X
Alcohol Consumption										X
Blood Pressure	X									
Maximum HR	X									
Findings/Outcomes										
Improved Situational Awareness	X									
Improved Use of Force Decision Making	X									
Relief of PTSD Symptoms		X	X		X			X		
Decrease Burn Out				X						
Decrease in negative phys & psych responses to stress						X	X			
Improve resiliency									X	
Improved Quality of Life										X
Decrease alcohol consumption										X
Decreased Blood Pressure	X									
Decreased Maximum HR	X									

Key: AfAm – African American; **BP** – blood pressure; **BRS** – brief resilience scale; **CA** – clinician administered; **CBT** – cognitive behavioral therapy; **DEVCEQ** – distress endorsement validation credibility/expectancy questionnaire **DX** – diagnosis; **ERQ –** emotion regulation; questionnaire **EXP** – exposure; **FF** – fire fighter**; FFMQ –** five faucet mindfulness questionnaire**; HLQ –**health/lifestyle questionnaire; **HR** – heart rate; **IES –** impact events scale**; iPREP** – international performance resilience and efficiency program; **M –** mean**; MA –** meta-analysis**; MBRT** – Mindfulness-Based Resilience Training**; MM –** mixed method**; N** –total number of participants; **NR –** not reported; **OBI –**Oldenburg burnout inventory; **OPPS** – operational police stress questionnaire; **PCL** – posttraumatic checklist; **PHQ-9** – patient health questionnaire; **POQA** – personal organizational quality assessment; **PHYS –** physiological; **PSS** – posttraumatic symptoms scale; **PSYCH** – psychological; **PTSD** – posttraumatic stress disorder**; PTGI –** Posttraumatic Growth Inventory**; RSES –** response to stressful experiences scale; **RCT –** randomized control trial; **SR** – systematic review; **ST** – sub-threshold; **USA –** United States of America

Appendix C

General Adaptation Syndrome

Figure C.1

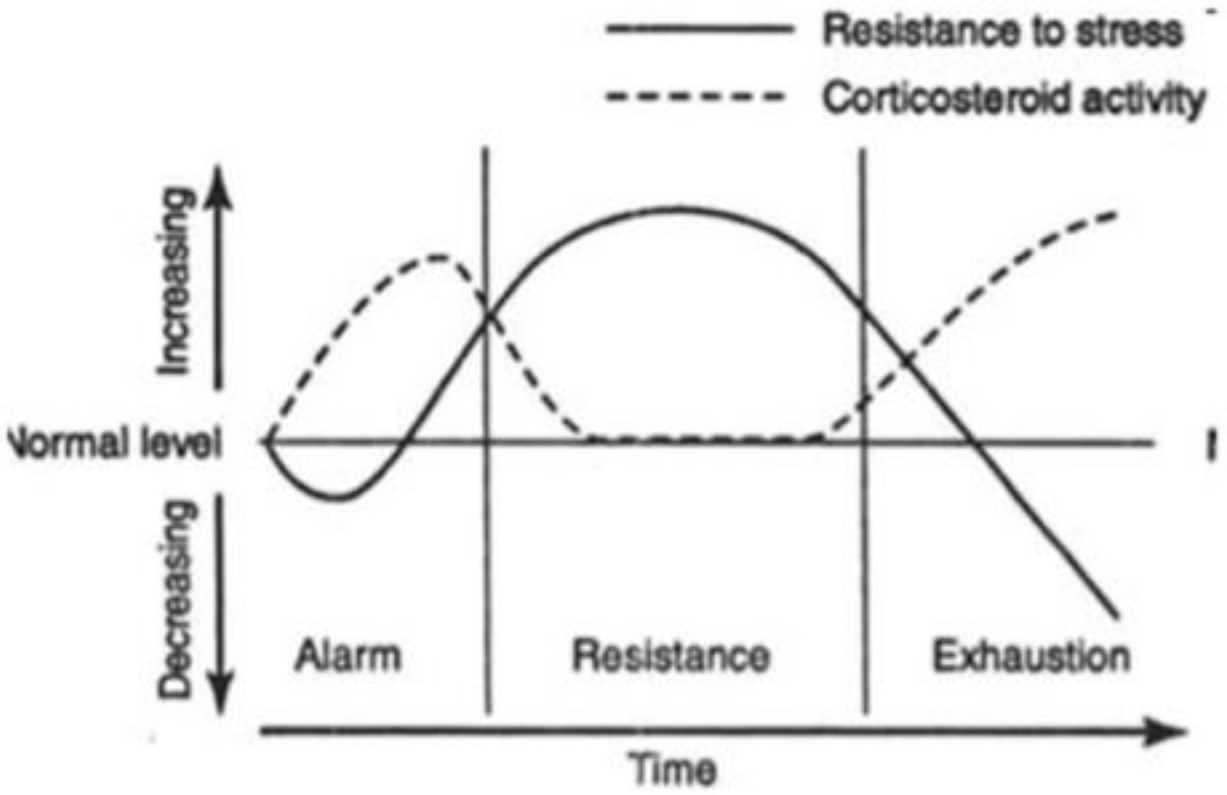

Figure C.1. General Adaptation Syndrome. Reprinted from The Stress if Life (p.87), by V.L. Burrows, 2015, New York, NY: McGraw Hill. Copy right 1956 by McGraw-Hill.

Appendix D

The Start Model of Knowledge Transformation

Figure D.1

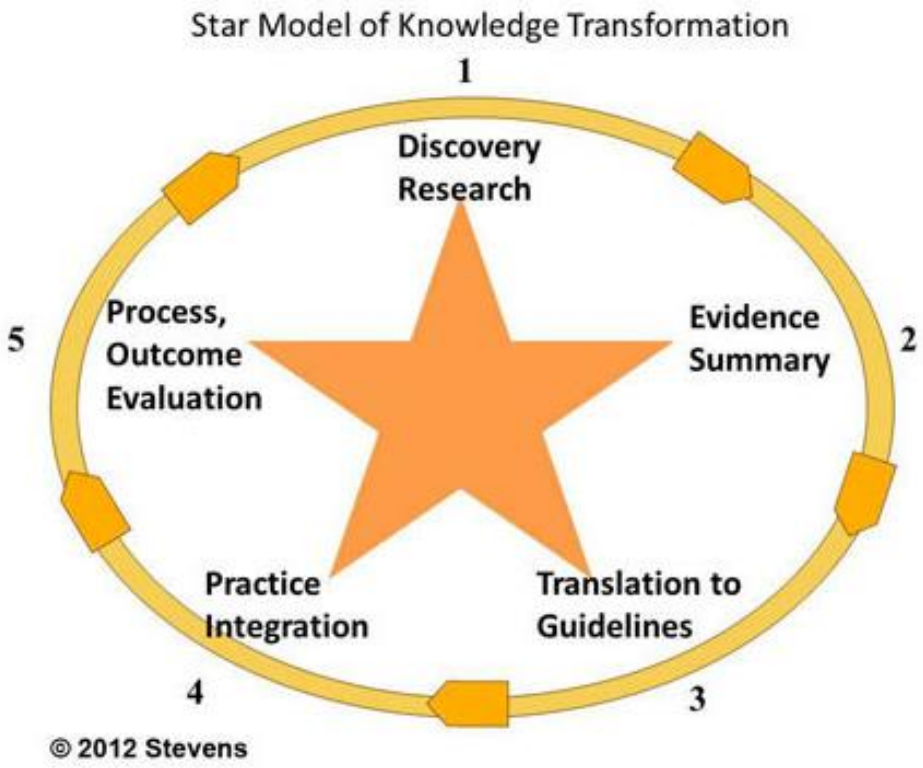

Figure D.1. The Star Model of Knowledge Transformation. Reprinted from School of Nursing UT Health and Science Center, by K.R. Stevens, 2012, Retrieved from http://nursing.uthscsa.edu/onrs/starmodel/star-model.asp. Copy right 2012 by The University of Texas Health Science Center at San Antonio.

Appendix E

Institutional Review Board Approval

ASU Knowledge Enterprise Development

EXEMPTION GRANTED

Monica Rauton
EDSON: DNP
928/634-1331
monica.rauton@asu.edu

Dear Monica Rauton:

On 8/1/2019 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	The Effect of Resiliency Training on Vicarious Trauma in Law Enforcement
Investigator:	Monica Rauton
IRB ID:	STUDY00010461
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Wolfe_Summer Consent Form, Category: Consent Form; • Recruitment Memo, Category: Recruitment Materials; • Resilience Training Outline, Category: Other (to reflect anything not captured above); • Rauton_M_CITI_Training, Category: Other (to reflect anything not captured above); • Wolfe_S_CITI_Training, Category: Other (to reflect anything not captured above); • Letter of Support, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Pre Resilience Training Test, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Wolfe_Summer_Protocol, Category: IRB Protocol; • Demographic Survey, Category: Measures (Survey questions/Interview questions /interview guides/focus

	group questions); • Measurement Tool, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Post Resilience Training Test, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 8/1/2019.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Summer Wolfe
Monica Rauton
Summer Wolfe

Appendix F

Site Authorization Letter

Coconino County
SHERIFF'S OFFICE
Jim Driscoll, Sheriff

July 29, 2019

To Whom It May Concern,

On behalf of Coconino County Sheriff's Office, I am pleased to support the Doctor of Nursing Project titled *The Effect of Resiliency Training on Vicarious Trauma in Law Enforcement* as proposed by Dr. Rauton DNP, RN, ANP-C and Summer Wolfe RN, MSN, graduate student.

Our organization agrees to serve as the Doctor of Nursing Practice site for a resiliency training session, data collection, and data analysis.

Thank you for providing the opportunity for Coconino County Sheriff's Office to be a part of this important project.

Sincerely,

Jim Driscoll
Sheriff

Appendix G

Informed Consent

Consent Form

Dear Potential Participant,

I am a graduate student under the direction of Professor Dr. Rauton in the Edson College of Nursing and Health Innovation at Arizona State University. I am conducting an evidence-based project to determine if a resiliency training will increase awareness and knowledge regarding the importance of adaptive coping skills to effectively manage work related trauma and stress. I am inviting you to participate in the training.

I will deliver the training in one session using a PowerPoint presentation for approximately two hours. Participants will receive a demographic survey, pre-resilience knowledge test, and a Response to Stressful Experience Scale to complete before the training. A post-resilience knowledge test and a Response to Stressful Experience Scale will be administered and collected after the training.

Your responses to the surveys and test will be anonymous. The information collected will be linked to a unique 6-digit numeric project identification number using the last 2 digits in your social security number, the last 2 digits in your birth year and the first 2 digits in your birth month. The results of this project may be used in reports, presentations, or publications as aggregate data only.

Your participation in the resilience training is voluntary. If you choose not to participate or to withdraw from the training at any time, there will be no penalty. It will not affect your employment at Coconino County Sheriff's Office. You must be 18 years of age or older to participate. The data collected will be used to assess the effectiveness of the project. There is no known risk greater than those that are associated with everyday types of activity. Attending the resiliency training and completing the pre and post training surveys will be considered your consent to participate. If you have any questions concerning this program, please contact the following team members:

Dr. Rauton - (928) 821-3995
Summer Wolfe - (928) 600-4966

This project has been reviewed and approved by the Arizona State University Institutional Review Board. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Sincerely,

Summer Wolfe MSN, RN, Graduate Student
Dr. Rauton, DNP, RN, ANP

Appendix H

Resiliency Training Outline

Resilience Training for Vicarious Trauma in Law Enforcement Officers

1. Introduction

- Explanation of resiliency training session provided.
- Consent Form Disseminated to potential participants.

2. Pre-Resilience Training Session

- Completion of Demographic Survey
- Completion of Pre-Resilience Knowledge Test
- Completion of Response to Stressful Experience Scale

3. Resilience Training Session Outline

- Why a resilience training?
- What is the definition of vicarious trauma?
- How does the brain and body respond to stress and trauma?
- How is the brain involved in improving resilience and optimizing performance?
- What is post-traumatic stress disorder?
- What are the health and mental health outcomes associated with cumulative exposure to stress and trauma?
- What are risk and protective factors?
- How can adaptive coping skills improve resilience?
- How can resilience contribute to career longevity and improve wellbeing?

4. Post-Resilience Training Session

- Completion of Post-Resilience Knowledge Test
- Completion of Response to Stressful Experience Scale
- Conclusion: Review the role of resilience in promoting wellbeing.

Appendix I

Response to Stressful Experiences Measure

Instructions

The following statements describe how some individuals may think, feel, or act during and after the most stressful events in life. Please indicate by checking the appropriate box how well each of these statements describes you during and after life's most stressful events.

During and after life's most stessful events, I tend to...	Exactly like me				Not at all like me
1. ...take action to fix things.	☐	☐	☐	☐	☐
2. ...not give up trying to solve problems I think I can solve.	☐	☐	☐	☐	☐
3. ...find a way to do what's necessary to carry on.	☐	☐	☐	☐	☐
4. ...pray or meditate.	☐	☐	☐	☐	☐
5. ...face my fears.	☐	☐	☐	☐	☐
6. ...find opportunity for growth.	☐	☐	☐	☐	☐
7. ...calm and comfort myself.	☐	☐	☐	☐	☐
8. ...try to "recharge" myself before I have to face the next challenge.	☐	☐	☐	☐	☐
9. ...see it as a challenge that will make me better.	☐	☐	☐	☐	☐
10. ...look at the problem in a number of ways.	☐	☐	☐	☐	☐
11. ...look for creative solutions to the problem.	☐	☐	☐	☐	☐
12. ...put things in perspective and realize I will have times of joy and times of sadness.	☐	☐	☐	☐	☐
13. ...be good at determining which situations *are* changeable and which *are not*.	☐	☐	☐	☐	☐
14. ...find meaning from the experience.	☐	☐	☐	☐	☐
15. ...find strength in the meaning, purpose, or mission of my life.	☐	☐	☐	☐	☐
16. ...know I will bounce back.	☐	☐	☐	☐	☐
17. ...expect that I can handle it.	☐	☐	☐	☐	☐
18. ...learn important and useful life lessons.	☐	☐	☐	☐	☐
19. ...understand that bad things can happen to anyone, not just me.	☐	☐	☐	☐	☐
20. ...lean on my faith in God or a higher power.	☐	☐	☐	☐	☐
21. ...draw upon lessons learned from failures and past mistakes.	☐	☐	☐	☐	☐
22. ...practice ways to handle it better next time.	☐	☐	☐	☐	☐

Appendix J

Resiliency Test

Circle the correct answer.

1. Cognitive flexibility is defined as?

A) The ability to move beyond adversity.

B) Maintaining balance in your life.

C) Embracing adversity to advance coping skills.

D) Overcoming avoidance, addressing fears to embrace challenges, and the ability to adjust beliefs.

2. Adaptive coping skills include?

A) Fitting into your environment to diffuse stress.

B) Accepting the situation for what it is.

C) Altering physiological and psychological responses to internal and external stress.

D) Embracing adversity and trauma.

3. Self-efficacy advances resiliency by?

A) Bolstering confidence.

B) Promoting confidence in one's ability to respond adaptively to stress and trauma.

C) Encouraging a pro-active approach to trauma and stress.

D) Improving your outlook regarding the future.

4. Disequilibrium provides an opportunity during trauma and stress?

A) To appreciate the informational value of stressors and trauma.

B) To grow from adversity.

C) To avoid future stress and trauma.

D) To write a letter of resignation.

5. How can you improve resilience and sustain wellbeing?

A) Understand the impact of stress.

B) Regulating emotional and physiological responses to trauma to reduce cortisol levels.

C) Read research regarding self-care.

D) Avoiding trauma and stress.

6. Regulating responses to trauma and stress can?

A) Make you less reactive so people can tolerate you.

B) Contribute to harmony in all areas of your life.

C) Improve memory, enhance clear-decision-making, and maximize job performance.

D) Improve glucose metabolism resulting in weight loss.

7. Controlling your physical response to stress and trauma involves?

A) Holding your breath for ten seconds.

B) Focusing on your environment.

C) Distracting yourself by ignoring the current situation.

D) Heart focused breathing by inhaling for five seconds and exhaling for five seconds.

8. The leading cause of death in law enforcement officers is?

A) Cardiovascular Disease

B) Post Traumatic Stress Disorder

C) Diabetes

D) Suicide

9. Exercise can promote resiliency by?

A) Providing an outlet to let off steam.

B) Suppressing Cortisol levels.

C) Increasing neuro-trophic factors promoting the repair and growth of neurons.

D) Both B and C are correct.

.

10. How failure is perceived is important. Why?

A) Failure is inevitable.

B) Black and white thinking leads to unrealistic expectations of future successes.

C) Failure does not mean you don't make a difference.

D) All the above.

11. Due to frequent exposure to vicarious trauma law enforcement officers have a higher rate of?

A) Depression

B) Alcohol and Drug Abuse

C) Post Traumatic Stress Disorder

D) Anxiety

12. Psychosocial factors that promote resilience include?

A) Commitment to a meaningful cause.

B) Religiosity/Spirituality

C) High level of social support/peer support

D) All of the above.

13. Did this training provide an opportunity to learn effective coping skills to better respond to exposure to trauma and stress?

14. What changes would you like to see to this training?

15. Would you recommend this training to others? If yes or no please explain why?

Appendix K

Demographic Survey

Demographic Data

1. Age: _____

2. Gender: Male____ Female____

3. Ethnicity:

   ___African American/Black

   ___ Hispanic

   ___ Native American or American Indian

   ___ Anglo/White

   ____Asian

   ___ Other/Mixed Race _____

   ___ Pacific Islander Alaska Native, Native Hawaiian or Other Pacific Islander

4. Current Marital Status:
   ___Single
   ___Married
   ___Separated
   ___Divorced
   ___Widowed

5. Highest level of education:
   ___High School Diploma
   ___GED
   ___Associate Degree
   ___Bachelor's Degree
   ___Master's Degree
   ___Other (Specify): _____

6. Have you ever served in the military?
   Yes: ____ No: ____

   Number of years served? _____

7. Did your military experience involve combat experience?
   Yes: ____ No: _____

8. Years of service in law enforcement: _____

9. Current rank: _____

10. What is your primary assignment? (i.e. CI, uniformed patrol, administration)

_____

11. What is the percentage of time spent in the areas listed below:

____ Service related calls involving mentally ill subjects
____ Service related calls involving suicidal subjects
____ Completed Suicides
____ Crimes against children
____ Nuisance Calls
____ Domestic Violence
____ Juvenile Crime
____ Property Crime
____ Sex Crime
____ Drugs/Narcotics
____ Vehicle/Traffic
____ Homicide
____ Dead Bodies
____ Administrative Work
____ Other (Specify): _____

12. Have you ever been injured in the line of duty?
    Yes: ____ No: ____

13. If yes, were the injuries sustained from a physical assault or criminal action by another individual?
    Yes: ____ No: _____

14. Other than training have you ever done any of the following listed below as part of your employment? Please indicate the number of times.

____Discharged a firearm at an object or vehicle
____Drawn a firearm
____Discharged a firearm at a person
____Been fired at by another person
____Engaged in use of force

15. What were the approximate number of hours in your initial/academy training involving resiliency education to manage exposure to trauma?
____ None
____1-2 hours
____3-4 hours
____5 -6 hours
____7- 8 hours
____Other (Specify): _____

16. What are the approximate hours of training received after initial training involving resiliency education to manage exposure to trauma?
____ None
____1-2 hours
____3-4 hours
____5 -6 hours
____7- 8 hours
____Other (Specify): _____

17. Have you ever sought treatment for any physical problems related to exposure to trauma or stress?
Yes____ No ____

18. Have you ever sought treatment for any psychological problems related to exposure to trauma or stress?
Yes____ No ____

19. Have you ever needed additional time off from work to recover from exposure to a traumatic event?
Yes____ No ____

20. Do you believe there is adequate support to address exposure to traumatic situations by your employer?
    Yes ____ No____

21. Would you be more likely to seek help from a peer-run-support group or team versus seeking help from a mental health professional?
    Yes____ No ____

22. If you marked yes to the above question please explain why?

Appendix L

Budget

Table L.1

Phase	Activities	Expenses
Preparation	**Direct Costs**	
	Developing Resiliency Training Intervention DNP Student Hours @ $25/hr	40 hours $1,000.00
	Professional Consultant $150/hr Travel Expenses Round trip from Flagstaff, Arizona to Mesa, Arizona	4 hours $ 600.00 320 miles $ 65.00
	Create Pre/Post Education Materials and Questionnaires DNP Student Hours @ $25/hr	10 hours $ 250.00
	DNP Mentor Guidance	4 hours@$38 $152.00
Implementation		
	6 Deputies @ $28/hr training DNP Student hours $25/hour training data collection Computer Overhead Projector	2 hours $336.00 2.5 hours $62.50 1/$0
Evaluation		
	Coding and analyzing data DNP Student hours $25/hr training ASU Bio-Stat Clinical Professor $38/hr SPSS Software	4 hours $100.00 4 hours $152.00 1/$0
	Resiliency Measurement Tool	Public Domain/$0
		Expense Totals: $2,717.00 **DNP Student Total:** $1,477.50

Appendix M

Demographic Characteristics and Experiences

Table M.1

Demographic Characteristics	N	%
Ethnicity		
White	6	100.0
Gender		
Male	5	83.3
Female	1	16.7
Rank		
Detective	4	66.6
Lieutenant	1	16.7
Sergeant	1	16.7
Highest Level of Education		
High School	3	50.0
Bachelor's Degree	3	50.0
Military Service		
Yes	1	16.7
No	5	83.3
Primary Assignment		
Criminal Investigation	6	100.0
Injured in the line of duty		
Yes	2	33.3
No	4	66.7

Appendix N

Amount of Time (%) Spent Job-Related Activities

Table N.1

Percentage of Time spent:	Mean	Standard Deviation	Range
On service-related calls involving mentally ill subjects	0.0	0.0	0%
Service-related calls involving suicidal subjects	0.0	0.0	0%
Completed Suicides	4.67	2.58	0% – 8%
Crimes against children	6.67	7.53	0% – 20%
Nuisance Calls	0.0	0.0	0%
Domestic Violence	7.33	6.98	0% – 20%
Juvenile Crime	2.00	2.45	0% – 5%
Property Crime	7.50	6.89	0% – 20%
Sex Crime	13.0	14.97	0% – 40%
Drugs/Narcotics	0.17	0.41	0% – 1%
Vehicle/Traffic	0.0	0.0	0%
Homicide	6.33	6.98	0% – 20%
Dead Bodies	18.33	22.95	0% – 60%
Administrative Work	25.00	32.86	0% – 80%
Other (Specify)	0.0	0.0	0%

Appendix O

Descriptive and Reliability Statistics for the Response to Stressful Experience Scale

Table O.1

Response to Stressful Experience Scale	**Median**	**Range**	**Inter-item reliability**
Pre-test	54.5	49 – 69	.67
Post-test	59.5	51 - 68	.60